

CLAIMS

WHAT IS CLAIMED IS:

1. A golf club head comprising:

a toe;

a heel; and

a center section joining the toe to the heel, the center section including a cavity structured to receive an insert.
2. The golf club head of claim 1, wherein the center section is structured so that the toe and heel comprise at least 80% of a weight of the club head.
3. The golf club head of claim 1, wherein the center section is structured so that the toe and heel comprise at least 90% of a weight of the club head.
4. The golf club head of claim 1, wherein the cavity includes a back wall, a floor, two side walls and a roof, with the roof, back wall and floor having a thickness between 0.020 and 0.20 inch.
5. The golf club head of claim 1, wherein the insert increases a natural frequency of the golf club head.
6. The golf club head of claim 1, wherein the insert is coupled to a back face of the golf club head, with the back face located opposite a strike face, and the insert is structured to dampen a vibration generated in the strike face when a golf ball contacts the strike face.

7. The golf club head of claim 1, wherein the insert is substantially transparent, and positioned adjacent to a floor of the golf club head, with the floor including a sight line for positioning the golf club head relative to a golf ball, with the sight line visible through the insert.

8. The golf club head of claim 1, wherein the insert weighs between 5 and 30 grams.

9. The golf club head of claim 1, wherein the insert weighs about 12 grams.

10. The golf club head of claim 1, wherein the insert is constructed of a material selected from the group consisting of: polycarbonate, graphite, aluminum and graphite epoxy.

11. The golf club head of claim 1, wherein the insert is substantially transparent.

12. The golf club head of claim 1, wherein a method of manufacturing the insert comprises a powder metallurgy process.

13. The golf club head of claim 1, further comprising a hosel positioned in the insert.

14. The golf club head of claim 1, further comprising a vapor deposited coating covering at least the toe and heel of the golf club head.

15. The golf club head of claim 14, wherein the vapor deposited coating is comprised of a material selected from the group consisting of: titanium carbo-nitride, chromium carbo-nitride, vanadium, chromium, zirconium, titanium, niobium, molybdenum, hafnium, tantalum, and tungsten, nitrogen and carbon.

16. The golf club head of claim 1, wherein the club head is selected from the group consisting of: wood-type club heads, iron-type club heads, and putter-type club heads.

17. The golf club head of claim 1, further comprising a dampener structured to couple the insert to the cavity.

18. The golf club head of claim 17, wherein the dampener is selected from the group consisting of: viscoelastic polymers and acrylic polymers.

19. The golf club head of claim 17, wherein the dampener has a thickness between 0.002 and 0.020 inch.

20. The golf club head of claim 17, wherein the dampener changes a sound emitted by the golf club head when a golf ball is struck.

21. A golf club head including a strike face for hitting a golf ball, the golf club head comprising:

a toe;

a heel;

a center section joining the toe to the heel, the center section including a cavity structured to receive a rear-insert; and

an face-insert coupled to the strike face.

22. The golf club head of claim 21, wherein the face-insert is comprised of materials selected from the group consisting of: thermoplastic polyurethanes, and a blend of polyurethane and silicone.

23. The golf club head of claim 21, wherein the face-insert comprises about 50% of an area of the strike face.

24. The golf club head of claim 21, wherein the face-insert comprises between about 45 and 75% of an area of the strike face.

25. The golf club head of claim 21, wherein face-insert has a Bayshore rebound between 30 and 60.

26. The golf club head of claim 21, wherein the center section is structured so that the toe and heel comprise at least 80% of a weight of the club head.

27. The golf club head of claim 21, wherein the insert increases a natural frequency of the golf club head.

28. The golf club head of claim 21, wherein the insert is coupled to a back face of the golf club head, with the back face located opposite a strike face, and the insert

is structured to dampen a vibration generated in the strike face when a golf ball contacts the strike face.

29. The golf club head of claim 21, wherein the insert is substantially transparent, and positioned adjacent to a floor of the golf club head, with the floor including a sight line for positioning the golf club head relative to a golf ball, with the sight line visible through the insert.

30. The golf club head of claim 21, further comprising a golf club shaft positioned in the insert.

31. The golf club head of claim 21, further comprising a physical vapor deposited coating covering at least the toe and heel of the golf club head.

32. The golf club head of claim 21, wherein the club head is selected from the group consisting of: wood-type club heads, iron-type club heads, and putter-type club heads.

33. The golf club head of claim 21, further comprising a dampener structured to couple the insert to the cavity.

34. A golf club head comprising:

a toe;

a heel;

a center section joining the toe to the heel, the center section structured so that the toe and heel comprise at least 80% of a weight of the club head, the center section including a cavity; and

a substantially transparent insert positioned in the cavity and adjacent to a floor of the cavity, with the floor including a sight line for positioning the golf club head relative to a golf ball, with the sight line visible through the insert.

35. The golf club head of claim 34, wherein the insert increases a natural frequency of the golf club head.

36. The golf club head of claim 34, further comprising a vapor deposited coating covering at least the toe and heel of the golf club head.

37. The golf club head of claim 34, further comprising a dampener structured to couple the insert to the cavity.

38. The golf club head of claim 37, wherein the dampener changes a sound emitted by the golf club head when a golf ball is struck.

39. The golf club head of claim 34, wherein the club head is selected from the group consisting of: wood-type club heads, iron-type club heads, and putter-type club heads.